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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/599,148	06/21/2000	Stuart T. Linsky	22-0124	6922

23400 7590 06/09/2004

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	6

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/599,148	LINSKY ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 June 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the reference numbers for numerous items in the figures are incomplete. Examples of incomplete reference numbers are; Figures 1 and 2 feed paths should have reference numbers 112 and 114 instead of 11, Figure 2 ferrite switches should have reference numbers 110, 212, and 214 instead of 11 and 21. Please examine the rest of the figures for similar informalities. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen et al. (US 6,430,393 B1) in view of Berman et al. (6,091,934).

Regarding Claim 1, Rosen teaches a downlink beam frame signal processing system for a communication satellite, the processing system comprising: a packet

switch routing self addressed uplink data to a memory, the memory comprising at least a first and a second downlink beam hop location storage (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory).

Rosen does not teach a power amplifier for amplifying a waveform based in part on the uplink data for transmission; and a power gating circuit coupled to the power amplifier and including a power gate input responsive to a power gating signal to remove RF power from at least a portion of the waveform, thereby reducing DC power consumption of the power amplifier.

Berman teaches a power amplifier for amplifying a waveform based in part on the uplink data for transmission (Column 3 lines 8 – 15); and a power gating circuit coupled to the power amplifier and including a power gate input responsive to a power gating signal to remove RF power from at least a portion of the waveform, thereby reducing DC power consumption of the power amplifier (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier with the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 2, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 1. Berman further teaches wherein the power gating signal is indicative of unavailability of uplink data in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is unavailability of uplink data in memory that means there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 3, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises too little uplink data to fill a payload field in the waveform (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little data to fill a payload field that means there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 4, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises the absence of uplink data in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is an absence of uplink data in memory there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 5, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein unavailability of uplink data comprises too little uplink data to fill at least two payload fields in the waveform (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little uplink data to fill

at least two payload fields there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 6, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power-gating signal is indicative of a predetermined satellite power requirement (Column 3 lines 53 – 67, Column 4 lines 8 - 22).

Regarding Claim 7, Berman teaches all of the claimed limitations recited in Claim 6. Berman further teaches wherein the power requirement comprises an eclipse power requirement (Column 4 lines 8 – 22, the saturation point is the eclipse power requirement).

Regarding Claim 8, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power-gating signal is indicative of a statistical multiplexed estimate of downlink utilization (Column 3 lines 22 – 35, Column 3 lines 53 – 67, since this can be a TDM system there will be an inherent statistical multiplexed estimate).

Regarding Claim 9, Berman teaches all of the claimed limitations recited in Claim 2. Berman further teaches wherein the power gating signal is indicative of a desired average first hop location queue depth formed in the memory (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, the hop location queue depth is directly dependent on the amount of data traffic on the uplink channel thus this is an inherent characteristic).

Regarding Claim 10, Rosen teaches a method for processing a downlink beam frame signal, the method comprising: switching self addressed uplink data into at least one of a first and second downlink hop location storage area in a memory (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory).

Rosen does not teach amplifying a frame signal based in part on the uplink data for transmission; and prior to transmission, power gating at least a portion of the frame signal in response to a power-gating signal.

Berman teaches amplifying a frame signal based in part on the uplink data for transmission; and prior to transmission, power gating at least a portion of the frame signal in response to a power gating signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier with the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 11, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to completely fill the payload in the frame signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column

4 lines 8 – 22, when there is too little data to fill a payload field that means that there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 12, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to fill the payload in the frame signal beyond a predetermined threshold (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little data to fill a payload field beyond a predetermined threshold there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 13, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to too little uplink data in the memory to completely fill at least two payload fields in the frame signal (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22, when there is too little uplink data to fill at least two payload fields there will be a corresponding change in the uplink traffic on the channel thus this is an inherent characteristic).

Regarding Claim 14, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to satellite power requirements (Column 3 lines 53 – 67, Column 4 lines 8 - 22).

Regarding Claim 15, Berman teaches all of the claimed limitations recited in Claim 14. Berman further teaches power gating at least a payload of the frame signal in response to satellite eclipse power requirements (Column 4 lines 8 – 22, the saturation point is the eclipse power requirement).

Regarding Claim 16, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches power gating at least a payload of the frame signal in response to a statistical multiplexed estimate of downlink utilization (Column 3 lines 22 – 35, Column 3 lines 53 – 67, since this can be a TDM system there will be an inherent statistical multiplexed estimate).

Regarding Claim 17, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 10. Berman further teaches wherein power gating maintaining at least one synchronization field in the frame signal (Column 3 lines 22 – 35, Column 3 lines 53 – 67, TDM systems comprise data frames thus there will be an inherent field for frame synchronization).

Regarding Claim 18, Rosen teaches a downlink beam frame signal processing system for a communication satellite, the processing system comprising: a packet switch routing self addressed uplink data to a memory, the memory comprising at least first and a second downlink beam hop location storage (Column 3 lines 37 – 44, Column 4 lines 8 – 20, since this is a satellite system with downlink beams there will be a first and second downlink beam hop, the beam hop location is determined by the routing table which is stored in memory); and a waveform generator coupled to the packet

switch, the waveform generator comprising a modulator for producing a waveform to be transmitted (Figure 3).

Rosen does not teach a power gating input for carrying a power-gating signal for removing power from at least a portion of the waveform before transmission.

Berman teaches a power gating input for carrying a power-gating signal for removing power from at least a portion of the waveform before transmission (Column 3 lines 8 – 15, Column 3 lines 36 – 67, Column 4 lines 8 – 22).

Rosen and Berman both teach a satellite system with multiple downlink beams thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power gating method taught in Berman in the satellite system of Rosen for the purposes of meeting peak traffic demands and reducing power consumption during low traffic periods.

Regarding Claim 19, Rosen in view of Berman teaches all of the claimed limitations recited in Claim 18. Berman further teaches a filter (Column 3 lines 55 – 58).

Regarding Claim 20, Berman teaches all of the claimed limitations recited in Claim 19. Berman further teaches frequency content removed in a pass band region of the filter in response to the power-gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Regarding Claim 21, Berman teaches all of the claimed limitations recited in Claim 19. Berman further teaches wherein a first payload section of the waveform has frequency content removed in a pass band region of the filter in response to the power

gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Regarding Claim 22, Berman teaches all of the claimed limitations recited in Claim 21. Berman further teaches wherein a second payload section of the waveform has frequency content remove in the pass band region of the filter in response to the power gating signal (Column 3 lines 53 – 67, Column 4 lines 8 – 22, as the uplink traffic changes there will be a corresponding removal of the frequency content thus this is an inherent characteristic).

Conclusion

4. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand –delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to

the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

NICK CORSARO
PATENT EXAMINER